Chapter 2
Methodology

The methodology used to complete this study and compile the database in compliance with Section 51010.05 of the California Government Code has been outlined in the following subsections.

2.1 Funding and Contracting

The California State Fire Marshal, sought United States Department of Energy (DOE) funding. Funding was granted through the DOE=s management and operating contractor for the National Oil Program, BDM/Oklahoma.

BDM/Oklahoma solicited proposals to conduct this study and prepare and compile the database. The proposals were evaluated using three specific assessment criteria: technical approach, management, and cost/price. EDM Services was selected as offering the best overall value for this project and was awarded a contract. The resulting contract was executed on May 15, 1995.

2.2 Steering Committee

The California State Fire Marshal designated Nancy Wolfe, Division Chief, Pipeline Safety and Enforcement, to coordinate the required study and work with BDM/Oklahoma and EDM Services to achieve the objectives of the law. At an organizational meeting, it was decided that a statewide Pipeline Assessment Steering Committee was need to provide guidance and assist with the study. Industry associations and State and local regulatory agencies nominated individuals to participate on the committee. The Pipeline Assessment Steering Committee members are listed on Table 2-1.

The first Committee meeting was held in Long Beach, California on November 17, 1994. During the meeting, a project schedule was established, the study parameters were discussed and agreed upon, and the process that BDM Oklahoma would use to select a subcontractor were discussed.

A second Steering Committee meeting was held on June 15, 1995, with EDM Services staff to kick-off the project. At this meeting, the following issues were resolved:

- The Committee established a definition of the leaks which should be included in this study. The criteria for reporting leaks to the California Office of Emergency Services (OES) (one barrel or more, or any spill onto water, or any spill which could threaten ground water) was selected for use.

- The Committee established a interval for collecting leak data. The Committee felt that leak data would not be uniformly available before November 1992 when the OES reporting requirements went into effect. As a result, the Steering Committee endorsed a two-year study period [January 1993, through December 1994] for this study.

- The Committee decided that all inactive and idle pipelines should be included in the study. Only abandoned lines which had been physically removed would be excluded from the study since they no longer exist.

- The Committee developed a definition for the pipelines to be included in this study. This definition was presented earlier in Chapter 1 of this report.

Additional Steering Committee meetings were held on July 19, 1995 and November 13, 1995. During these sessions, the project status was reviewed. The meetings proved to be very helpful as the representatives from government and industry all volunteered to help secure responses from the numerous operators who had not yet responded to the study.

In addition to the Steering Committee meetings, EDM Services staff attended and made presentations at the following meetings:

- November 9, 1995 Planning Meeting - Sacramento

- November 29, 1995 Legislative Update - Senator O=Connell=s Office, Sacramento

2.3 Identify Study Participants and Pipelines

Approximately 1,200 questionnaires were distributed by EDM Services to potential study participants on June 1, 1995. The mailing list for these notification and identification letters was compiled from the following:

- the owners and operators of CSFM-regulated interstate and intrastate pipelines,
- the owners and operators of refineries, chemical plants, and terminals located in California, and
- the owners and operators of all oil and/or gas wells located within the state.

The notification letter included the following:

- a brief description of the law requiring the study;
- a statement that the CSFM intends to use the study results to assess the fitness and safety of the pipelines and develop recommendations to improve, repair or replace proposed pipelines;
- notification that EDM Services= personnel would be contacting each operator by mail, telephone, and in some cases visiting selected operators to conduct field audits;
- a schematic drawing and description which defined the pipelines under study;
- a form to be used by each operator to identify a contact who would be responsible for coordinating study activities and to identify whether or not their company owned or operated any pipelines meeting the study criteria; and,
- notification that EDM Services would be forwarding questionnaires to each operator of pipelines meeting the study criteria, soliciting specific information regarding leak records, pipeline inventory, etc.

These initial questionnaires were due for return to EDM Services by June 12, 1995. However, through the end of July 1995, only 461 responses had been received, with 43 operators indicating that they owned or operated pipelines which should be included in the study. Having only received responses from about one-third of the operators who received the initial questionnaires, EDM Services initiated an extensive campaign.

2.4 Data Gathering

In June 1995, EDM Services developed pipeline inventory and leak data questionnaires. The questionnaires included the pipeline inventory and leak data forms and accompanying instructions. They were used to gather the necessary data. These forms and instructions were reviewed and endorsed by the Steering Committee, CSFM and BDM/Oklahoma prior to their distribution and use.

On June 30, 1995, EDM Services began distributing copies of the Pipeline Inventory and Leak Data Questionnaires to all operators who had been identified for participation in the study. These documents were then distributed to additional operators as they were identified for inclusion in the study.

2.5 Database Development

A database, containing the necessary data fields, was established using Microsoft Access database software. The database was structured using three tables.

- The first contained basic operator data (contact name, company name, address, telephone number, pipeline location, year of construction, preventive maintenance activities, leak detection system, etc.).

- The second contained the pipeline inventory data (segment diameter, pipe grade, pipe type, year installed, wall thickness, cathodic protection system, above/below grade, coating type, etc.).

- The third contained the leak data (location, date of leak, probable cause, injury/fatality data, total damage, volume spilled, volume recovered.

The pipeline operators forwarded completed Pipeline Inventory and Leak Data Questionnaires to EDM Services.

The pipeline inventory and leak data was input into the database as it was received from the pipeline operators. The last of the data for the pipelines identified for inclusion in the study were received on April 10, 1996.

2.6 Field Audits

EDM Services staff personally visited each operator who owned and/or operated pipelines which met the study criteria. This effort had a very positive impact on the accuracy of the study results. Specifically, a number of operators and pipelines were deleted from the study when it was found that their pipelines did not meet the study criteria. The largest percentage of these pipelines were located entirely within an proposed oil field boundary; as a result, they fell within the DOGGR=s jurisdiction and did not meet the study criteria. The second largest category of pipelines deleted from the study were CSFM-regulated interstate and intrastate pipelines, which were already under the CSFM jurisdiction.

The audits were also very useful in securing missing and incomplete data from the pipeline operators. Telephone interviews were also conducted to resolve inconsistencies and pursue questionable data.

2.7 Barriers and Incentive Options

A questionnaire was designed to gather information regarding the barriers and incentive options. On January 31, 1996, this questionnaire was distributed to the public agencies having pipeline jurisdiction, interested local agencies, Steering Committee members, interstate pipeline operators, intrastate pipeline operators, and the owners of pipelines meeting this study criteria. The questionnaires requested input on the following:

- What incentives could be provided to pipeline operators to encourage pipeline replacements or improvements?
- How could these incentives be implemented?
- What barriers had been encountered with pipeline replacement or improvement projects?
- Specifically, what regulatory barriers had been encountered?
- What specific permit barriers had been encountered?

- What environmental impact report requirements had been a barrier for pipeline replacement and/or improvement projects?
- What impact, if any, did these barriers have on the pipeline replacement and/or improvement project (e.g. project delay, deferral, elimination, etc.)?
- What were the actual consequences (financial, environmental, preventable leaks, public safety, employee safety, etc.) of these barriers? Did they impact pipeline safety?
- What were the potential consequences of these barriers?
- Case histories of pipeline replacement and/or improvement projects which have been delayed, deferred or canceled because of regulatory, permit or environmental impact barriers were requested.
- A description of the replacement/improvement project and the barriers encountered was requested.
- A description of the actual and potential consequences (financial, environmental, public safety, employee safety, etc.) of the project delay, deferral, or elimination was requested.
- If pipeline safety was sacrificed, specific details were requested regarding how and why it was impacted.
- Recommendations were requested for removing any of the barriers encountered.

The completed questionnaires were forwarded to BDM/Oklahoma for review and regulatory analysis. CSFM felt strongly that the identification of barriers/incentives should be done by an independent third party. This decision was based upon the fact that, as a pipeline regulator, CSFM itself could be the subject of comments from study participants. USDOE agreed to review the data and write the response concerning this subject.

2.8 Potential Data Inconsistencies

The importance of an accurate pipeline inventory on the study results can't be overemphasized; the inventory data directly affects the calculated incident rates since it is used in the denominator of the incident rate equation. For example, a ten percent error in the pipeline inventory alone would result in a corresponding ten percent error in the calculated incident rate.

Table 2-1
Pipeline Assessment Steering Committee

Member Name	Title	Organization
Tom Berg	Director	Resources Management County of Ventura
Jim Norris	Petroleum Coordinator	Building Department County of Santa Barbara
John Euphrat	Principal Planner	Planning Department County of San Luis Obispo
Mike Niblett	Petroleum Specialist	Petroleum Department County of Santa Barbara
Bill Guerard	State Oil & Gas Supervisor	DOGGR
John Donovan	Director Environmental & Regulatory Affairs	California Independent Petroleum Association (CIPA)
Les Clark	Vice President	Independent Oil Producers Agency (IOPA)
Frank Holmes	Coastal Coordinator	Western States Petroleum Association (WSPA)
Craig Jackson	Coordinator Environmental & Regulatory Compliance	Texaco USA
Nathan Manske	Lobbyist for Advocation & Research	Kahl Associates
Barry McMahan	Assistant Vice President	Seneca Resources
Dan Milhalik	Operations Coordinator	Texaco T&T
Cathy Reheis	Managing Coordinator	Western States Petroleum Association (WSPA)
Ralph Warrington	Senior Staff Engineer	Cal Resources LLC
Nancy Wolfe	Division Chief Pipeline Safety and Enforcement	California State Fire Marshal